REMARKS

The application is believed to be in condition for allowance for the reasons set forth below.

Claims 2, 4, 6, 8-11 and 15-53 were previously pending in the application. Claim 37 is canceled and new claims 54 and 55 are added.

Applicants note with appreciation the indication that claims 6, 8, 16, 18, 19 and 21 are allowed and that claims 9, 11, 30-32, 34, 42, 44, 45, 47, 48, 50, 51 and 53 are allowable.

Claims 2, 4, 10, 15, 22-29, 33, 35-41, 43, 46, 49 and 52 were rejected over ABE et al. 6,661,476 in view of SHIMADA et al. 6,448,578 and further in view of FUJIKAWA 6,414,738. That rejection is respectfully traversed.

The Official Action recognizes that ABE fails to disclose the recited nitrogen concentration being 25 atomic % or more.

While SHIMADA was previously offered for this feature, now FUJIKAWA is offered for this feature.

However, FUJIKAWA, similar to SHIMADA, does not disclose that for which it is offered.

Each of independent claims 2, 15, 22 and 35 recites a TiN film having a nitrogen concentration of 25 atomic % or higher. Thus, the TiN film itself has a nitrogen concentration of 25 atomic % or higher.

As previously argued, column 7, lines 4-35 of SHIMADA discloses forming a titanium film containing nitrogen by reactive sputtering, while changing the nitrogen partial pressure ratio as a formation parameter. SHIMADA does not disclose a relationship between the partial pressure ratio and atomic %.

Column 9, lines 26-43 of FUJIKAWA suffers from the same shortcoming as SHIMADA. This passage discloses a nitrogen ratio in the deposition atmosphere ranges from 20 to 40%. Lines 26-30 of the above passage disclose that the nitrogen content in the TiN film increases as the nitrogen volume in the deposition chamber increases. However, FUJIKAWA does not disclose the nitrogen content in the film itself.

As FUJIKAWA does not disclose a TiN film having a nitrogen concentration of 25 atomic % or higher as recited, all the claim limitations are not taught or suggested. Thus, the above-noted feature would not have been obvious to one having ordinary skill in the art.

Moreover, as disclosed by FUJIKAWA, the nitrogen concentration of a TiN film is determined not only by the partial pressure of nitrogen of a film deposition atmosphere, but also by the type of film deposition apparatus and other film deposition conditions. Thus, the nitrogen concentration of a TiN film in FUJIKAWA is not determined by the film deposition conditions of the TiN film.

In contrast, the present claims recite that the TiN film having a concentration of 25 atomic % or higher is in a film

located at a top of a multilevel conductive structure. As seen in Figure 8, by way of example, because the nitrogen concentration of the TiN film is limited to the range of 25 atomic % or higher, an advantage is obtained in that the connection reliability at the terminals is improved. Neither FUJIKAWA nor SHIMADA recognizes this advantage and thus does not disclose this feature.

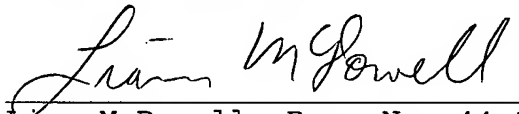
New claims 54 and 55 are added. Support for the new claims can be found at least at paragraph [0020] and in the original claims. The proposed combination of references fails to disclose or suggest a multilevel structure at the terminals of the recited lines. Therefore, the proposed combination does not address problems attempted to be solved by the present invention including electrical connection resistance increase and connection reliability improvement at the terminals.

In view of the foregoing remarks, it is believed that the present application is in condition for allowance. Reconsideration and passage to issue are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON



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